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Setting the minimum wage ☆

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ABSTRACT

The process leading to the setting of the minimum wage so far has been overlooked by economists. There are two common ways of setting national minimum wages: they are either government legislated or the byproduct of collective bargaining agreements, which are extended erga omnes to all workers. We develop a simple model relating the level of the minimum wage to the setting regime. Next, we exploit a new data set on minimum wages in 68 countries having a statutory national minimum level of pay in the period 1981–2005. We find that a Government legislated minimum wage is lower than a wage floor set within collective agreements. This effect survives to several robustness checks and can be interpreted as a causal effect of the setting regime on the level of the minimum wage.

1. Introduction

> "… on the central issue of the level of the minimum wage, the Commission negotiated increases sensitive to the shifting power relations in the product and labour markets… The consensus did not emerge simply from discussion or sweet reasons, but shifting power relations… ." Brown, W. (2009) The Process of Fixing the British National Minimum Wage, 1997–2007, British Journal of Industrial Relations, vol. 47, n. 2, 429–443.

While there is a large body of theoretical and empirical research on the effects of minimum wages on employment, unemployment and the wage distribution, much less attention has been devoted to date to the process leading to the determination of the level of the minimum wage. The quote above is from the secretary of the Commission charged to set the level of the minimum wage in the UK. It points to heavy bargains and power struggles involved in the setting of the minimum wage, rather than academic discussions or moral suasion about the most appropriate wage floor. Given this structure of decision-making, the way in which the different groups – employers, workers, high and low productivity sectors – are represented in this process is bound to affect the level of the minimum wage, and its responsiveness to changing macroeconomic conditions. In other words, the fixing regime matters.

There is a wide cross-country variation in the levels of minimum wages as well as in minimum wage setting regimes. Minimum wage to average wage ratios range from a low 5% in Ethiopia to a high 95% in Nepal. Even within the OECD area, there is a wide dispersion in the levels of wage floors: the cross-country standard deviation of minimum to average wage ratios is about one fourth of the mean. Minimum wage fixing regimes range from conditions where a statutory minimum wage is unilaterally set by the Government to regimes where it is the outcome of negotiations between unions and employers' associations and the Government has only the passive role of providing a legal status to these agreements, extending their coverage also to workers in the non-unionized segment. Among these two extreme scenarios, there is a wide array of hybrid regimes depending on the role attributed to the state or to collective bargaining in the setting of the minimum wage.

There is some literature, originated mainly in the US and Canada and related to political economics, on votes concerning the adoption of a statutory minimum wage (Silbermann and Durden, 1976; Uri and Mixon, 1980; Blais et al., 1989; Rodrik, 1999) or, more recently, on cultural determinants of preferences for minimum wages (Algan and Cahuc, 2007). There is also some empirical literature on the time-series variation of minimum wages (e.g., Williams, 2009). However, to my knowledge there has not been to date any systematic attempt to either relate preferences on the level of the minimum wage to the fixing regimes and to use the heterogeneity in fixing regimes in explaining the cross-country (and potentially also time-series) variation in actual minimum wage levels.

The analysis of the interactions between minimum wages and fixing regimes can be valuable in assessing the relevance of policy endogeneity in empirical analyses of the effects of minimum wages on the labor market. The huge literature on the effects of minimum wages on employment

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and the wage distribution rarely addresses policy endogeneity. When it does so it typically uses as identifying assumption the time invariance of the unobserved heterogeneity which could affect both, employment and minimum wage levels. However, minimum wages are likely to respond to changing macroeconomic conditions, including employment and unemployment levels. Not only the levels of minimum wages are likely to be affected by those variables that are taken as left-hand-side variables, but also different wage setting regimes may respond differently to the same type of shocks, due to the fact that they involve a different location along the trade-off between reducing poverty among working people and shutting down low productivity jobs. Alternative wage setting regimes may also involve a different frequency at which wage floors are adjusted, hence a varying degree of responsiveness to the same type of shocks.

A proper understanding of the way in which the fixing regime operates may be useful in understanding the often conflicting results of the empirical literature on minimum wages. Only about two thirds of the studies reviewed by Neumark and Wascher (2007) found negative employment effects of minimum wages and not always these effects were statistically significant. These results are often interpreted as indications of a partial failure of the standard competitive labor market model yielding a monotonic, negative, relationship between the level of minimum wages and employment. As for instance pointed out by Christopher Flinn (2007), "recent studies indicate that the "textbook" competitive model of the labour market … may have serious deficiencies in accounting for minimum wage effects on labour market outcomes". The competing model is one where monopsonistic firms face upward sloping labor supply curves. In this environment, both a positive relationship between employment and the minimum wage at relatively low wage floors, and the standard negative relationship at higher levels can be generated. A proper evaluation of the effects of the minimum wage should however take into account of the driving forces of the changes in the level of the minimum wages and of other measures of the minimum wage "bite" which are used to characterize its effects. They should also consider whether these changes have been anticipated by the relevant actors. For instance, a Government legislated minimum wage is likely to be more affected by electoral changes, than a minimum wage being set within collective agreements, which is more likely to respond to changes in macroeconomic conditions independently of political cycles, depending on the frequency of collective bargaining. Insofar as the effects of minimum wages on employment are non-monotonic, understanding what drives the changes in the level of wage floors over time is essential.

In this paper I develop a simple model yielding implications as to the relation between the level of the minimum wage and the fixing regime. The model indicates under which conditions a Government legislated minimum wage is lower than a minimum wage set in the context of collective bargaining. The model yields a number of testable predictions as to the relationship between minimum wages, unemployment benefits and the elasticity of labor demand. Next, I exploit a new data set on minimum wages in 68 countries having some type of national minimum wage in the period 1981–2005 to explain the cross-country variation in minimum wage levels, using the above theory as guidance in defining the empirical framework. In particular, I look at the effect of differences in the fixing of the minimum wage on the ratio of the minimum wage to the average wage (or the median wage for the countries in which this information is available). I also investigate the way in which different types of minimum wages react to changes in the external environment (e.g., in the elasticity of labor demand) and in the generosity of unemployment benefits. I find that a Government legislated minimum wage is consistently lower than a wage floor set within collective agreements once controlling for these factors. This effect survives to several robustness checks and, if one agrees with the identification assumption proposed in this paper, hints at a causal relation between the setting regime and the level of the minimum wage. The identification assumption is that the ideology of Governments at the time of the first introduction of the minimum wage (in most countries dating 20 years or more) did affect the choice of the fixing regime, but not the level of minimum wages in the period covered by our data. Notice that most countries changed repeatedly the political orientation of Governments after the first introduction of minimum wages, while the fixing regime did not change in any of the countries and time-periods covered by our dataset.

The plan of the paper is as follows. Section 2 presents a simple model comparing different minimum wage fixing regimes. Section 3 illustrates the dataset and provides descriptive statistics. Section 4 details the econometric approach and presents the main results. Finally, Section 5 provides directions for further research.

2. The choice of the fixing regime: some theory

Consider the two extreme cases of minimum wage setting regimes. The first regime is one where minimum wages are set within a collective bargaining procedure at the centralized (national) level. Typically, it will be a union to bargain with an employers' association. Both are maximizing the surplus of their members. The second regime is one where a Government sets unilaterally the minimum wage maximizing a social welfare function which may include some (distributional) concerns about the surplus of employed and unemployed workers. To define a proper benchmark, it is convenient to begin characterizing the laissez-faire equilibrium without a minimum wage.

2.1. A laissez-faire equilibrium

For notational convenience assume that the marginal value of a job (labor demand), v, is a decreasing (at a constant-elasticity) function of the employment rate L, e.g., $v = AL^{-\eta}$, where A indexes labor productivity, and the index of the (inverse) labor demand elasticity, η, takes values between zero (flat labor demand at A) and infinity (vertical labor demand at 1). By replacing the marginal value of a job with the market wage, w, and solving for L, we can then write the labor demand schedule as follows

$$L = \left(\frac{A}{w}\right)^{\frac{1}{\eta}}. \tag{1}$$

The supply side of the labor market is given by the cumulative distribution function, $G(.)$, of the reservation wages. The latter is, by construction, increasing in w. To keep things simple we shall assume that also this schedule has a constant-elasticity functional form so that:

$$G(w) = w^{\frac{1}{\varepsilon}}. \tag{2}$$

Where the elasticity parameter may range between $\varepsilon = 0$ (in which case the labor supply is flat and normalized to unity) and plus infinity. Larger values of ε denote increasingly inelastic labor supply schedules, and as ε tends to infinity labor supply becomes perfectly vertical.

2.2. A competitive equilibrium

In a market without imperfections, the laissez-faire equilibrium wage will be at the intersection of the two curves, i.e.:

$$w^* = A^{\frac{\varepsilon}{\varepsilon+\eta}}. \tag{3}$$

It is easy to show that this equilibrium is Pareto optimal. Integrate labor demand over L and neglect irrelevant constants of integration, to obtain the total surplus of employers as follows:

$$\frac{AL^{1-\eta}}{1-\eta} - wL.$$

The above coincides with profits as the fallback option of employers is indeed zero (no production, hence no profits).